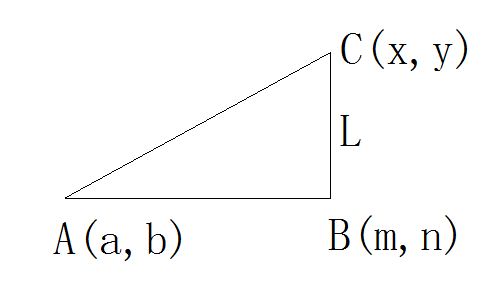
**已知直角三角形两点坐标和一边长,求另一点坐标**



**如图：**A(a, b)，B(m, n)，BC=L，求C点坐标(x, y)

**思路：**

(1)

1-1 kAB \* kCB = -1  
1-2 [(b - n) / (a - m)] \* [(y - n) / (x - m)] = -1  
1-3 (b - n) \* (y – n) = -(a – m) \* (x - m)  
1-4 (y – n) = - [(a - m) \* (x - m)] / (b - n)

1-5 y = n - [(a - m) \* (x - m)] / (b - n)

(2)

2-1 CB = L

2-2 CB² = L²

2-3 (x – m)² + (y – n)² = L²

(3)

把1-4带入2-3

3-1 (x – m)² + {-[(a – m) \* (x – m)] / (b – n)}² = L²

3-2 (x – m)² + [(a – m)² \* (x – m)²] / (b – n)² = L²

3-3 (x – m)² + [1 + (a – m)² / (b – n)²] = L²

3-4 (x – m)² + {[b - n]² + (a – m)² \* (b - n)²} / (b – n)²} = L²

3-5 (x - m)² = [L² \* (b – n)²] / [(a – m)² + (b – n)²]

3-6 x – m = ±√{[L² \* (b - n)²] / [(a - m)² + (b – n)²]}

3-7 x – m = ±[L \* (b - n)] / √[(a - m)² + (b – n)²]

3-8 x = m ± [L \* (b - n)] / √[(a - m)² + (b – n)²]

(4)

把3-8带入1-5

4-1 y = n – {(a - m) \* (m ± [L \* (b – n)] / √[(a - m)² + (b – n)²] – m)} / (b – n)

4-2 y = n – {(a - m) \* (±[L \* (b – n)] / √[(a - m)² + (b – n)²])} / (b – n)

4-3 y = n ± [L \* (a - m)] / √[(a - m)² + (b – n)²]

**结果：**

x1 = m + [L \* (b - n)] / √[(a - m)² + (b – n)²]

y1 = n + [L \* (a - m)] / √[(a - m)² + (b – n)²]

和

x1 = m - [L \* (b - n)] / √[(a - m)² + (b – n)²]

y1 = n - [L \* (a - m)] / √[(a - m)² + (b – n)²]